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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* JEFFREY L. RICE, STEVE P. HAMMOND,  
RANDY HECKENDORN, and DENNIS YOUNG

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Appeal 2009-004834  
Application 10/065,639  
Technology Center 1700

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Decided: February 12, 2010

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Before BRADLEY R. GARRIS, ADRIENE LEPIANE HANLON, and  
CHUNG K. PAK, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision finally rejecting claims 12 through 17, 19, and 21. Claims 1 through 11, the only other claims pending in the above-identified application, stand withdrawn from consideration by the Examiner. (See the Final Office Action mailed September 16, 2005.). We have jurisdiction under 35 U.S.C. §§ 6 and 134.

We AFFIRM.

### STATEMENT OF THE CASE

The subject matter on appeal is directed to a method of making “floor mats for vehicles and the like, and more particularly to a recyclable, rubber-like thermoplastic backing material used in a throw-in mat for a vehicle floor” (Spec. 1, para. 0001 and claims 12 and 21). The recyclable thermoplastic backing material employed, which solves the cost problem associated with non-recyclable thermoplastic waste removal, is light and inexpensive and said to have “the feel of rubber” desired by consumers (Spec. 2, paras. 0005-0007). The Specification does not provide any specific definition or meaning of the phrase “rubber-like feel and weight” recited in claim 12. (See generally Spec.). Rather, the Specification states that the thermoplastic backing material employed is preferably based on an ethylene-octene copolymer formed using a metallocene catalyst and lists the thermoplastic materials sold under the trademarks Exact®, manufactured by Exxon, and Engage®, manufactured by Dupont Dow Elastomers as two preferred examples (Spec. 3-4, paras. 0018 and 0019). Details of the appealed subject matter are recited in illustrative claims 12 and 21 reproduced from the Claims Appendix to the Fifth Corrected Appeal Brief (“App. Br.”), filed July 8, 2008 as shown below:

12. A method for forming a throw-in mat having a rubber-like feel and weight, the method comprising:

providing a carpet pile sewn through a first side of a primary backing layer;

forming a recyclable, rubber-like thermoplastic backing material comprising an ethylene-octene copolymer formed using a metallocene catalyst;

coupling said recyclable, rubber-like thermoplastic backing material to a second side of said primary backing layer to form the throw in mat, said second side being opposite of said first side;

introducing the thrown-in mat to a mat press;

pressing the throw-in mat at a desired temperature and a desired pressure for a predetermined period of time within said mat press to form said recyclable, rubber-like thermoplastic backing material to a desired shape, said recyclable, rubber-like thermoplastic backing material including a plurality of nibs formed thereon;

removing said throw-in mat from said mat press; and

cooling said throw-in mat in a cold press.

21. A method for forming a throw-in mat having a rubber-like feel and weight, the method comprising:

providing a carpet pile sewn through a first side of a primary backing layer;

forming a recyclable, rubber-like thermoplastic backing material comprising an ethylene-octene copolymer formed using a metallocene catalyst; wherein said ethylene-octene copolymer formed using a metallocene catalyst comprises a first ethylene-octene copolymer formed using a metallocene catalyst and having a melt index of approximately 25-35 and a density of approximately 0.7 to 1.0 and a second ethylene-octene copolymer formed using said metallocene catalyst and having a melt index of approximately 2-4 and a density of approximately 0.7 to 1.0;

coupling said recyclable, rubber-like thermoplastic backing material to a second side of said primary backing layer to form the throw in mat, said second side being opposite of said first side;

introducing the thrown-in mat to a mat press;

pressing the throw-in mat at a desired temperature and a desired pressure for a predetermined period of time within said mat press to form said recyclable, rubber-like thermoplastic backing material to a desired shape, said recyclable, rubber-like thermoplastic backing material including a plurality of nibs formed thereon;

removing said throw-in mat from said mat press; and

cooling said throw-in mat in a cold press.

As evidence of unpatentability of the claimed subject matter, the Examiner relies on the following prior art references listed at page 3 of the Examiner's Answers ("Ans."), mailed October 2, 2008:

Hudkins	6,296,733 B1	Oct. 2, 2001
Bell	6,787,593 B2	Sep. 7, 2004

Appellants request review of the Examiner's rejection of claims 12 through 17, 19, and 21 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Hudkins and Bell (App. Br. 7).

Appellants traverse the Examiner's § 103(a) rejection, arguing patentability of the claims on appeal (App. Br. 7-11). Appellants also rely on a Declaration<sup>1</sup> executed by the inventors listed in the instant application

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<sup>1</sup> 37 C.F.R. § 1.131 is directed to declarations or affidavits used for the purpose of establishing an invention date prior to the effective date of an applied prior art reference in order to remove the reference as "prior art". However, the declaration submitted by Appellants is not directed to

on June 28, 2005 to show that the highly filled metallocene-catalyzed ethylene-octene copolymer taught by Bell is not capable of imparting the claimed “rubber-like” properties and complete nibs that would not break off easily during use (App. Br. 7-9).

### FINDINGS OF FACT (“FF”)

1. Hudkins discloses a floor mat used in an automobile (col. 1, ll. 5-10).

2. Appellants do not dispute the Examiner’s finding that Hudkins teaches:

Hudkins discloses a floor mat and a method of making said floor mat (title). The floor mat comprises a fibrous face cover layer that may be a tufted carpet (i.e., pile yarns sewn into a primary backing) (col. 3, lines 3-7). The backing layer may be a thermoplastic layer that is recyclable with the cover layer (col. 3, lines 8-9). The floor mat is made in an apparatus containing a mold, four presses, and a cooling station (col. 3, lines 61-65). Three presses have one surface heated to a temperature of 121.1 - 260°C (col. 4, line 66-col. 5, line 7 and col. 5, lines 15-21 and 54-56). The cooling station comprises a press having a temperature of 4.4-48.9°C (col. 5, lines 56-61). The floor mat is made by coupling the cover layer to the thermoplastic backing layer by extrusion of said thermoplastic layer and molding the layers together under sufficient time, temperature, and pressure (col. 6, lines 7-12 and col. 8, lines 19-31). The pressure of the first and second presses ranges from 10 to 50 psi (col. 6, lines 27-30 and 46-47), the pressure of the third press ranges from 50 to 180 psi (col. 6, lines 55-58), and the pressure of the fourth press ranges from 1 to 10 psi (col. 7, lines 42-44). Hudkins clearly teaches the presence of integrally formed

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establishing an earlier invention date and therefore, was improperly filed under 37 C.F.R. § 1.131. This declaration should have been submitted under 37 C.F.R. § 1.132.

projections or nibs on the surface of the recyclable thermoplastic backing material (col. 1, lines 23-27, col. 3, lines 11-17, and Figures 6 and 7). [(*Compare* Ans. 4 with App. Br. 7-9.)]

3. Hudkins teaches the importance of forming nibs on a vehicle mat backing layer in order to stabilize a mat on a carpet surface of an automobile (col. 1, ll. 5-10).

4. Hudkins broadly describe employing a recyclable thermoplastic carpet backing layer, but does not mention the “ethylene-octene copolymer formed using a metallocene catalyst” recited in claim 12. (*See generally* Hudkins.)

5. Hudkins, by virtue of not specifically identifying its recyclable thermoplastic employed in forming a backing layer having nibs, leaves the selection of an appropriate recyclable thermoplastic useful for such a purpose to one of ordinary skill in the art (*id.*).

6. Bell teaches sound-deadening composites of metallocene copolymers for certain applications, such as carpet backings used in vehicles (col. 1, ll. 7-40).

7. Bell teaches that the composites are made of about 10 to about 30 weight percent of a metallocene-catalyzed copolymer of ethylene and an alpha-comonomer, such as octane, about 2 to 7 weight percent of a plasticizer and about 60 to 85 weight percent of filler (col. 1, ll. 59-67 and col. 2, 34-39).

8. According to Bell (col. 1, l. 67 to col. 2, l. 6):

This combination of components [stated above] enables economical manufacture of the far superior sound absorbing composite which meets the demand of balanced properties of impact strength, tensile, elongation, flex modulus and specific gravity. These composite materials also satisfy the requirements of resistance to cold, mildew, fogging and flammability.

9. Bell also exemplifies the above-mentioned metallocene-catalyzed copolymers useful for automobile carpet backings as including

those thermoplastic materials available from DOW Plastics, or Exxon Chemical Company under the trademarks Engage® and Exact® (col. 2, ll. 34-48).

10. Appellants do not dispute the Examiner's finding that Exact® 4023 sold by Exxon Chemical Company has a melt index of 30. (*Compare* Ans. 6 *with* App. Br. 7-11).

11. Bell teaches preference for a composite comprising about 18 to 22 weight percent of a metallocene copolymer of ethylene and octane having a melt flow index of about 1 to 10g/10 minutes according to ASTM D 1238 and a density of from about 0.860 to about 0.9 g/cc and about 78 to 82 weight percent of fillers (col. 3, ll. 12-23).

12. Bell teaches that the composites are made by blending the above-mentioned components and extruding them into pellets which then can be melted and extruded to fabricate either unsupported sheets, parts, or carpet backing for use in automotive applications (col. 3, l. 60 to col. 4, l. 21).

13. Bell teaches that its metallocene-catalyzed ethylene-octene copolymer is used in forming vehicle carpet backings to provide the desired specific gravity and the superior elongation and flexibility properties (related to "rubber -like" properties) (col. 5, ll. 1-38).

14. Bell teaches that metallocene-catalyzed copolymer backed carpet samples, unlike those samples made with a non-metallocene-catalyzed polymer, can be bended at a very cold temperature (-30°C), without cracking (related to a rubber-like property) (col. 5, ll. 45-67).

15. The Declaration states (p. 2, paras. 4 and 5) that:

In our opinion, the highly filled metallocene ethylene-octene copolymers having a melt index between about 1 and 10 described in Bell could not be used in forming the throw-in mat having a rubber-like feel as disclosed in claims 12-17, 19, and 21 of the above-identified application, because the copolymer described in Bell does not have the flow properties essential to form complete nibs. In our opinion, the use of this copolymer would form incomplete nibs that would break off easily during use.



16. The Declaration does not provide any objective evidence to show that the thermoplastic composition containing 30 weight percent of a metallocene-catalyzed copolymer of ethylene and an alpha-comonomer, such as octane, about 60 weight percent of filler, and a plasticizer is not capable of forming the backing layer having nibs taught by Hudkins (Declaration 1-2).

17. The declaration only contains conclusory opinions by the inventors listed in this application (*id*).

18. The Specification exemplifies a recyclable thermoplastic composition having, *inter alia*, 13.335 weight percent of a metallocene-catalyzed ethylene octene copolymer having a melt index of 3, 25 weight percent of a metallocene-catalyzed ethylene octene copolymer having a melt index of 30, 55 weight percent of filler and a plasticizer, which is very close to some of the compositions taught by Bell.

19. The declaration only focuses on certain portions of Bell, but fails to consider what was suggested to one of ordinary skill in the art by the collective teachings of Hudkins and Bell (Declaration 1-2).

#### PRINCIPLES OF LAW, ISSUES, ANALYSES, AND CONCLUSIONS

It is well settled that the United States Patent and Trademark Office (PTO) is obligated to give claim terms their broadest reasonable interpretation, taking into account any enlightenment by way of definitions or otherwise found in the specification. *In re ICON Health and Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007) (“[T]he PTO must give claims their broadest reasonable construction consistent with the specification. Therefore, we look to the specification to see if it provides a definition for claim terms, but otherwise apply a broad interpretation.”) (Citation omitted); *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (“[T]he PTO gives a disputed claim term its broadest reasonable interpretation during patent prosecution.”).

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary considerations, if any. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966).

As stated in *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007):

[A]nalysis [of whether the subject matter of a claim would have been *prima facie* obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

As stated in *In re Dillon*, 919 F.2d 688, 692-93 (Fed. Cir. 1990) (*en banc*):

[W]here the prior art gives reason or motivation to make the claimed [invention]...the burden (and opportunity) then falls on an applicant to rebut that *prima facie* case. Such rebuttal or argument can consist of . . . any other argument or presentation of evidence that is pertinent.”

#### CLAIMS 12, 13, 16, 17 AND 19<sup>2</sup>:

Appellants do not question the Examiner’s determination that:

[I]t would have been obvious to select the specific ethylene-octene copolymer taught by Bell for the generic recyclable thermoplastic composition in the Hudkins process of making a vehicle floor mat [corresponding to the claimed throw-in mat) because the substitution of one recyclable thermoplastic material for another would have yielded predictable results to one to skilled in the art [sic., one skilled in

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<sup>2</sup> Appellants rely on the same arguments advanced in connection with the rejection of claim 12 to establish patentability of claims 13, 16, 17, and 19 (App. Br. 7-11). Therefore, we confine our discussion to claim 12.

the art] at the time of the invention. [(Compare Ans. 5 with App. Br. 7-9.)]

Moreover, the claimed “rubber-like” properties can be inferred from Bell’s disclosure of using its metallocene-catalyzed ethylene-octene copolymer to form vehicle carpet backing layers having desired specific gravity and superior elongation and flexibility (bending) properties. Such rubber-like properties would have also flowed naturally from following the suggestion of Bell of using of its metallocene-catalyzed ethylene-octene copolymer in forming vehicle carpet backing layers. *Ex parte Obiaya*, 227 USPQ 58, 60 (BPAI 1985) (holding that the recognition of additional beneficial properties flowing naturally from following the suggestion of the prior art cannot be the basis for patentability when the difference would otherwise obvious). This is especially true in this case since the Specification does not define the meaning of the phrase “rubber-like feel and weight” recited in claim 12, but equates such properties with using a metallocene-catalyzed ethylene-octene copolymer (Spec. 3-5, paras. 0017-0019).

Nevertheless, Appellants contend that the collective teachings of Hudkins and Bell would not have resulted in the claimed rubber-like thermoplastic backing material having completely formed nibs (App. Br. 7-9). According to Appellants, Bell does not employ a thermoplastic composition having a metallocene-catalyzed ethylene-octene copolymer having a particular flow index and a particular amount of filler, which are necessary for forming the claimed nibs and imparting the claimed rubber like properties (App. Br. 8). In support of this position, Appellants rely on a Declaration executed by the inventors of the subject matter disclosed in the instant application on June 28, 2005 to show that the highly filled

metallocene-catalyzed ethylene-octene copolymer taught by Bell is not capable of imparting the claimed “rubber-like” property and complete nibs that would not break off easily during use (App. Br. 7-9).

Thus, the dispositive question is: Have Appellants demonstrated that the Declaration by the inventors listed in the instant application is sufficient to show that the automobile mat (corresponding to the claimed throw-in mat) suggested by the collective teachings of Hudkins and Bell would not have the claimed rubber-like properties and nibs as required by claim 12? On this record, we answer this question in the negative.

As correctly found by the Examiner at pages 7-10 of the Answer, the Declaration is not sufficient to show that the automobile mat (corresponding to the claimed throw-in mat) suggested by the collective teachings of Hudkins and Bell would not have the claimed rubber-like properties and nibs as required by claim 12. Specifically, the Declaration does not provide any objective evidence to show that the thermoplastic composition taught by Bell, i.e., a thermoplastic composition containing 30 weight percent of a metallocene-catalyzed copolymer of ethylene and an alpha-comonomer, such as octane, about 60 weight percent of filler, and a plasticizer, is not capable of forming an automobile mat having the claimed rubber like properties and nibs. *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984); *In re Lindner*, 457 F.2d 506, 508 (CCPA 1972) (Appellants’ mere conclusory statements cannot take the place of objective evidence). It only contains conclusory statements by the inventors listed in this application. The fact that the carpet backing layer taught by Bell is bendable at a very cold temperature without cracking and its compositions includes those very close to the exemplified specific composition described at page 5 of the

Specification reasonably supports the Examiner's finding that the automobile mat suggested by Hudkins and Bell has the claimed "rubber like" properties and nibs.

The Declaration is also flawed since it only focuses on certain portions of Bell, but fails to consider what was suggested to one of ordinary skill in the art by the collective teachings of Hudkins and Bell. As indicated by the Examiner at page 5 of the Answer, Hudkins, by virtue of not specifically identifying its recyclable thermoplastic material employed in forming a backing layer having nibs, leaves the selection of an appropriate recyclable thermoplastic material useful for such a purpose to one of ordinary skill in the art. Hudkins teaches the importance of forming nibs on a vehicle mat backing layer in stabilizing a mat upon its placement on a carpet surface of an automobile. Bell, on the other hand, broadly describes the advantage of employing metallocene-catalyzed recyclable thermoplastic materials generally and about 60% or a greater amount of filler in a thermoplastic composition in forming, *inter alia*, a vehicle carpet backing layer. Although Bell teaches preference for metallocene-catalyzed recyclable thermoplastic materials having certain flow indexes and higher amounts of filler, the collective teachings of Hudkins and Bell would have led one of ordinary skill in the art to select appropriate metallocene-catalyzed recyclable thermoplastic materials and an appropriate amount of filler from those broadly taught by Bell in forming a vehicle mat backing layer having complete nibs as taught by Hudkins.

It follows that Appellants have not demonstrated that the Declaration by the inventors listed in the instant application is sufficient to show that the automobile mat (corresponding to the claimed throw-in mat) suggested by

the collective teachings of Hudkins and Bell would not have the claimed rubber-like properties and nibs as required by claims 12, 13, 16, 17 and 19.

Accordingly, we affirm the Examiner's decision rejecting claims 12, 13, 16, 17 and 19 under 35 U.S.C. § 103(a).

CLAIMS 14, 15, AND 21:

Appellants contend that the collective teachings of Hudkins and Bell would not have suggested employing the claimed metallocene-catalyzed ethylene-octene copolymer having a melt index of 25-35 in forming a backing layer having nibs as recited in claims 14 and 21 (App. Br. 9 and 11). Appellants also contend that the collective teachings of Hudkins and Bell would not have suggested employing the claimed additional metallocene-catalyzed ethylene-octene copolymer having a melt index of approximately 2-4 in forming a backing layer having nibs as recited in claims 15 and 21 (App. Br. 10).

Thus, the dispositive question is: Have Appellants identified harmful error in the Examiner's determination that that the collective teachings of Hudkins and Bell would have suggested employing the claimed metallocene-catalyzed ethylene-octene copolymer having the claimed melt indexes in forming a backing layer having nibs? On this record, we answer this question in the negative.

As indicated *supra*, Appellants do not dispute the Examiner's determination that one of ordinary skill in the art would have been led to employ the metallocene-catalyzed ethylene-octene copolymer materials taught by Bell in forming a backing layer having nips in the Hudkins process for making an automobile mat corresponding to the claimed throw-in mat. In addition, Bell broadly describes metallocene-catalyzed thermoplastic

materials suitable for making carpet backing layers. Bell, like Appellants at page 4, paragraph 0019, of the Specification, mentions that the metallocene-catalyzed thermoplastic materials include the metallocene-catalyzed ethylene-octene copolymers sold by DOW Plastics, or Exxon Chemical Company under the trademarks Engage® and Exact®. Appellants do not dispute the Examiner's finding that Exact® 4023 sold by Exxon Chemical Company has a melt index of 30. Bell also exemplifies some of these metallocene-catalyzed ethylene-octene copolymers having a melt index of 4-6. Although Bell teaches preference for metallocene-catalyzed recyclable thermoplastic materials having a flow index of 1 to 10, it teaches that metallocene-catalyzed ethylene-octene copolymers having a melt index of 4-30 are suitable for an automobile carpet backing layer.

Given these teachings, we concur with the Examiner that one of ordinary skill in the art would have been led to employ one or more metallocene-catalyzed ethylene-octene copolymers having a melt index within the range of 4 to 30 in the Hudkins process, with a reasonable expectation of successfully forming a vehicle mat backing layer having nibs. *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. at 417 (quoting *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 282 (1976)) (“[W]hen a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.”); *In re Kerkhoven*, 626 F.2d 846, 850 (CCPA 1980) (“It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose.”).

It follows that Appellants have not identified harmful error in the Examiner's determination that the collective teachings of Hudkins and Bell would have suggested employing the claimed metallocene-catalyzed ethylene-octene copolymer having the claimed melt indexes in forming a backing layer having nibs in the Hudkins process as required by claims 14, 15, and 21.

Accordingly, we affirm the Examiner's decision rejecting claims 14, 15, and 21 under 35 U.S.C. § 103(a).

#### ORDER

In view of the foregoing, the decision of the Examiner rejecting the claims on appeal is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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